

## IN THE CLAIMS

1. **(currently amended)** A burst signal detection circuit comprising:

a DC variation removing circuit detecting the bottom level ~~or the peak level~~ of an input signal when an input signal level is falling, and removing the DC level variation of the input signal by differentially amplifying the difference between the input signal level and ~~the peak level or~~ detected bottom level of the input signal; and

an amplitude identifying circuit detecting the presence or absence of a burst signal in said input signal based on the output signal from the DC variation removing circuit;

said amplifying identifying circuit including:

an amplitude detection circuit detecting the maximum amplitude of the output signal of said DC variation removing circuit;

a threshold level control circuit controlling a threshold; and

a comparator circuit comparing the output level of said amplitude detection circuit with said threshold level and outputting a detection signal indicating the presence or absence of the burst signal.

2. **(currently amended)** The burst signal detection circuit according to claim 1, wherein said DC variation removing circuit includes:

a bottom detection circuit ~~or a peak detection circuit for~~ detecting the bottom level ~~or the peak level, respectively,~~ of the input signal when the input signal level is

falling, and a differential amplifier ~~for~~ differentially amplifying the difference between the input signal and the output signal from said bottom detection circuit ~~or said peak detection circuit~~.

3. **(currently amended)** The burst signal detection circuit according to claim 1, wherein said DC variation removing circuit includes:

a bottom detection circuit ~~or a peak detection circuit~~ for detecting the bottom level ~~or the peak level, respectively~~, of the input signal when the input signal level is falling;

a level shift circuit ~~for~~ shifting the output signal of said bottom detection circuit ~~or said peak detection circuit~~ by a predetermined value; and

a differential amplifier ~~for~~ amplifying the difference between the output signal of said level shift circuit and the input signal.

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4. **(currently amended)** The burst signal detection circuit according to claim 1, wherein said amplitude identifying circuit includes:

a peak detection circuit or a bottom detection circuit ~~for~~ detecting the maximum level or the minimum level, respectively, of the output signal from the DC variation removing circuit;

a threshold level control circuit ~~for~~ generating a threshold level; and

a comparator circuit ~~for~~ comparing the output level of said peak detection circuit or said bottom detection circuit with said threshold level.

5. **(currently amended)** The burst signal detection circuit according to claim 1,

wherein said amplitude identifying circuit includes:

a peak detection circuit or a bottom detection circuit ~~for~~ detecting the maximum level or the minimum level, respectively, of the output signal from the DC variation removing circuit;

a threshold level control circuit ~~for~~ generating a threshold level by shifting the output level of said bottom detection circuit or said peak detection circuit by a predetermined value; and

a comparator circuit ~~for~~ comparing the output level of said peak detection circuit or said bottom detection circuit with said threshold level.

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6. (currently amended) The burst signal detection circuit according to claim 1,

wherein said amplitude identifying circuit includes;

a peak detection circuit and a bottom detection circuit ~~for~~ detecting the maximum level and the minimum level, respectively, of the output signal from the DC variation removing circuit;

a threshold level control circuit ~~for~~ generating a first threshold level by shifting the output level of said bottom detection circuit by a predetermined value and generating a second threshold level by shifting the output level of said peak detection circuit by a predetermined value; and

a comparator circuit ~~for~~ comparing said first threshold level and said second threshold level with each other.

7. (currently amended) The burst signal detection circuit according to claim 1, wherein said threshold level control circuit includes a temperature compensating circuit ~~for~~ changing said threshold level in accordance with the temperature change, said temperature compensating circuit being so configured as to compensate for the variation of the gain due to the temperature change.

8. (currently amended) The burst signal detection circuit according to claim 1, wherein said threshold level control circuit includes a reference voltage circuit ~~for~~ changing said threshold level with the supply voltage change, said reference voltage circuit being so configured as to compensate for the variation of the gain due to the supply voltage change.

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9. (currently amended) The burst signal detection circuit according to claim 1, further comprising a ~~photo-diode~~ photodiode [for] receiving an optical signal and a preamplifier [for] converting the current signal from said ~~photo-diode~~ photodiode into a voltage signal, wherein the arrival of a burst signal is detected from the output signal of said preamplifier.

10. (currently amended) A burst signal detection circuit comprising:  
a DC variation removing circuit ~~for~~ detecting the bottom level ~~or the peak level~~ of an input signal when the input signal level is falling and removing the DC level variation of the input signal by differentially amplifying the difference between the input signal level and the ~~peak level or~~ detected bottom level of the input signal;

a signal amplifier amplifying the output signal of said DC variation removing circuit; and

an amplitude identifying circuit detecting the presence or absence of a burst signal in said input signal based on the output signal from said signal amplifier;

said amplitude identifying circuit including:

an amplitude detection circuit detecting the maximum amplitude of the output signal of said signal amplifier;

a threshold level control circuit controlling the threshold level; and

a comparator circuit comparing the output level of said amplitude detection circuit with said threshold level and outputting a detection signal indicating the presence or absence of the burst signal.

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**11. (currently amended)** The burst signal detection circuit according to claim 10, wherein said DC variation removing circuit includes:

a bottom detection circuit ~~or a peak detection circuit for~~ detecting the bottom level ~~or the peak level, respectively,~~ of the input signal when the input signal level is falling; and

a differential amplifier for differentially amplifying the difference between the input signal and the output signal from said bottom detection circuit ~~or said peak detection circuit.~~

**12. (currently amended)** The burst signal detection circuit according to claim 10, wherein said DC variation removing circuit includes:

a bottom detection circuit ~~or a peak detection circuit~~ for detecting the bottom level ~~or the peak level, respectively,~~ of the input signal when the input signal level is falling;

a level shift circuit ~~for~~ shifting the output signal of said bottom detection circuit ~~or said peak detection circuit~~ by a predetermined value; and

a differential amplifier ~~for~~ amplifying the difference between the output signal of said level shift circuit and the input signal.

**13. (currently amended)** The burst signal detection circuit according to claim 10, wherein said amplitude identifying circuit includes:

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a peak detection circuit or a bottom detection circuit [for] detecting the maximum level or the minimum level, respectively, of the output signal from the DC variation removing circuit;

a threshold level control circuit ~~for~~ generating a threshold level; and

a comparator circuit ~~for~~ comparing the output level of said peak detection circuit or said bottom detection circuit with said threshold level.

**14. (currently amended)** The burst signal detection circuit according to claim 10, wherein said amplitude identifying circuit includes:

a peak detection circuit or a bottom detection circuit ~~for~~ detecting the maximum level or the minimum level, respectively, of the output signal from the DC variation removing circuit;

a threshold level control circuit ~~for~~ generating a threshold level by shifting the output level of said bottom detection circuit or said peak detection circuit by a

predetermined value; and

a comparator circuit ~~for~~ comparing the output level of said peak detection circuit or said bottom detection circuit with said threshold level.

**15. (currently amended)** The burst signal detection circuit according to claim 10, wherein said amplitude identifying circuit includes:

a peak detection circuit and a bottom detection circuit ~~for~~ detecting the maximum level and the minimum level, respectively, of the output signal from the DC variation removing circuit;

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a threshold level control circuit ~~for~~ generating a first threshold level by shifting the output level of said bottom detection circuit by a predetermined value and generating a second threshold level by shifting the output level of said peak detection circuit by a predetermined value; and

a comparator circuit ~~for~~ comparing said first threshold level and said second threshold level with each other.

**16. (currently amended)** The burst signal detection circuit according to claim 10, wherein said threshold level control circuit includes a temperature compensating circuit ~~for~~ changing said threshold level in accordance with the temperature change, said temperature compensating circuit being so configured as to compensate for the variation of the gain due to the temperature change.

**17. (currently amended)** The burst signal detection circuit according to claim 10,

wherein said threshold level control circuit includes a reference voltage circuit ~~for~~ changing said threshold level with the supply voltage change, said reference voltage circuit being so configured as to compensate for the variation of the gain due to the supply voltage change.

**18. (currently amended)** The burst signal detection circuit according to claim 10, further comprising a photodiode ~~photo-diode~~ for receiving an optical signal and a preamplifier ~~for~~ converting the current signal from said ~~photo-diode~~ photodiode into a voltage signal, wherein the arrival of a burst signal is detected from the output signal of said preamplifier.

**19. (currently amended)** A burst signal detection circuit comprising:

~~an amplitude identifying circuit including:~~

an amplitude detection circuit ~~for~~ detecting the bottom level ~~or the peak level~~ of an input signal when an input signal level is falling, removing the DC level variation of the input signal by differentially amplifying the difference between the input signal level and the peak level ~~or bottom level~~ of the input signal, and detecting the maximum amplitude of said input signal;

a threshold level control circuit controlling a threshold level; and

a comparator circuit comparing the output level of said amplitude detection circuit with said threshold level and outputting a detection signal indicating the presence or absence of the burst signal.



20. (currently amended) The burst signal detection circuit according to claim 19, wherein said amplitude detection circuit ~~includes~~ comprises a master-slave type amplitude detection circuit including a master bottom detection circuit or a master peak detection circuit for detecting, when the input signal level is falling, the absolute minimum level or the absolute maximum level, respectively, of said input signal, respectively, and a slave peak detection circuit ~~or a slave bottom detection circuit for~~ detecting the relative maximum level ~~or the relative minimum level, respectively,~~ of said input signal from the output level of said master bottom detection circuit ~~or said master peak detection circuit.~~

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21. (currently amended) The burst signal detection circuit according to claim 20, wherein a level hold capacitor in said slave peak detection circuit ~~or said slave bottom detection circuit~~ of said master-slave type amplitude detection circuit is connected to the output of said master bottom detection circuit ~~or said master peak detection circuit.~~

22. (currently amended) The burst signal detection circuit according to claim 19, wherein said amplitude identifying circuit includes:

- a peak detection circuit or a bottom detection circuit ~~for~~ detecting the maximum level or the minimum level, respectively, of the output signal from the DC variation removing circuit;
- a threshold level control circuit [for] generating a threshold level; and

a comparator circuit for comparing the output level of said peak detection circuit or said bottom detection circuit with said threshold level.

**23. (currently amended)** The burst signal detection circuit according to claim 19, wherein said amplitude identifying circuit includes:

a peak detection circuit or a bottom detection circuit ~~for~~ detecting the maximum level or the minimum level, respectively, of the output signal from the DC variation removing circuit;

a threshold level control circuit ~~for~~ generating a threshold level by shifting the output level of said bottom detection circuit or said peak detection circuit by a predetermined value; and

a comparator circuit ~~for~~ comparing the output level of said peak detection circuit or said bottom detection circuit with said threshold level.

**24. (currently amended)** The burst signal detection circuit according to claim 19, wherein said amplitude identifying circuit includes:

a peak detection circuit and a bottom detection circuit ~~for~~ detecting the maximum level and the minimum level, respectively, of the output signal from the DC variation removing circuit;

a threshold level control circuit ~~for~~ generating a first threshold level by shifting the output level of said bottom detection circuit by a predetermined value and generating a second threshold level by shifting the output level of said peak detection circuit by a predetermined value; and

a comparator circuit ~~for~~ comparing said first threshold level and said second threshold level with each other.

**25. (currently amended)** The burst signal detection circuit according to claim 19, wherein said threshold level control circuit includes a temperature compensating circuit ~~for~~ changing said threshold level in accordance with the temperature change, said temperature compensating circuit being so configured as to compensate for the variation of the gain due to the temperature change.

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**26. (currently amended)** The burst signal detection circuit according to claim 19, wherein said threshold level control circuit includes a reference voltage circuit ~~for~~ changing said threshold level with the supply voltage change, said reference voltage circuit being so configured as to compensate for the variation of the gain due to the supply voltage change.

**27. (currently amended)** The burst signal detection circuit according to claim 19, further comprising a photodiode ~~photo-diode~~ ~~for~~ receiving an optical signal and a preamplifier converting the current signal from said photodiode ~~photo-diode~~ into a voltage signal, wherein the arrival of a burst signal is detected from the output signal of said preamplifier.

**28. (currently amended)** A burst signal detection circuit comprising:

a DC variation removing ~~circuit~~ signal amplifier detecting the bottom level of an input signal when the input signal level is falling ~~or the peak level of an input signal,~~ and removing the DC level variation of the input signal based on the detected ~~by differentially amplifying the difference between the input signal level and the peak level~~ or bottom level ~~of the input signal,~~ and for amplifying said input signal; and

an amplitude identifying circuit detecting the presence or absence of a burst signal in said input signal based on the output signal from the DC variation removing signal amplifier;

said amplitude identifying circuit including:

an amplitude detection circuit detecting the maximum amplitude of the output signal of said DC variation removing amplifier;

a threshold level control circuit controlling the threshold level; and

a comparator circuit comparing the output level of said amplitude detection circuit with said threshold level and outputting a detection signal indicating the presence or absence of the burst signal.

**29. (currently amended)** The burst signal detection circuit according to claim 28, wherein said DC variation removing signal amplifier includes:

a bottom detection circuit ~~or a peak detection circuit for~~ detecting the DC level variation of said input signal when the input signal level is falling:

a peak detection circuit detecting the DC level variation of said input signal when the input signal level is rising; and

an amplifier supplied with said input signal and the output signal of said bottom

detection circuit or the output signal of said peak detection circuit;

the negative phase output of said amplifier being fed back to the positive phase input side of said amplifier through a feedback resistor; and

the positive phase output of said amplifier being fed back to the negative phase input side of said amplifier through said peak detection circuit and a feedback resistor.

**30. (currently amended)** A The burst signal detection circuit according to claim 28, wherein said DC variation removing signal amplifier includes a master-slave type automatic threshold control circuit having:

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a master bottom detection circuit ~~or a master peak detection circuit for~~ detecting the absolute minimum level ~~or the absolute maximum level, respectively,~~ of said input signal when the input signal level is falling;

a slave peak detection circuit ~~or a slave bottom detection circuit for~~ detecting the relative maximum level ~~or the relative minimum level, respectively,~~ of said input signal from the output signal of said master bottom detection circuit ~~or said master peak detection circuit;~~ and

a voltage dividing circuit ~~for~~ generating a threshold level by dividing the output signal of said master bottom detection circuit ~~or said master peak detection circuit~~ and the output signal of said slave peak detection circuit ~~or said slave bottom detection circuit~~.

**31. (currently amended)** The burst signal detection circuit according to claim 28, wherein said DC variation removing signal amplifier includes a master-slave type automatic threshold control circuit having:

a master bottom detection circuit ~~or a master peak detection circuit~~ for detecting the absolute minimum level ~~or the absolute maximum level~~, respectively, of said input signal when the input signal level is falling;

a voltage dividing circuit ~~for~~ generating a voltage divided signal by dividing the output signal of said master bottom detecting signal ~~or said master peak detecting signal~~ and said input signal; and

a slave peak detection circuit ~~or a slave bottom detection circuit~~ for generating a threshold level by detecting the relative maximum level ~~or the relative minimum level~~, respectively, of said voltage divided signal from the output signal of said master bottom detection circuit ~~or said master peak detection circuit~~.

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32. **(currently amended)** The burst signal detection circuit according to claim 30, wherein the a level hold capacitor of said slave peak detection circuit ~~or said slave bottom detection circuit~~ of said master-slave type automatic threshold control circuit is connected to the output of said master bottom detection circuit ~~or said master peak detection circuit~~.

33. **(currently amended)** The burst signal detection circuit according to claim 31, wherein the a level hold capacitor of said slave peak detection circuit ~~or said slave bottom detection circuit~~ of said master-slave type automatic threshold control circuit is connected to the output of said master bottom detection circuit ~~or said master peak detection circuit~~.

34. **(currently amended)** The burst signal detection circuit according to claim 28, wherein said amplitude identifying circuit includes:

a peak detection circuit or a bottom detection circuit for detecting the maximum level or the minimum level, respectively, of the output signal from the DC variation removing circuit;

a threshold level control circuit ~~for~~ generating a threshold level; and

a comparator circuit ~~for~~ comparing the output level of said peak detection circuit or said bottom detection circuit with said threshold level.

**35. (currently amended)** The burst signal detection circuit according to claim 28, wherein said amplitude identifying circuit includes:

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a peak detection circuit or a bottom detection circuit for detecting the maximum level or the minimum level, respectively, of the output signal from the DC variation removing circuit;

a threshold level control circuit ~~for~~ generating a threshold level by shifting the output level of said bottom detection circuit or said peak detection circuit by a predetermined value; and

comparator circuit ~~for~~ comparing the output level of said peak detection circuit or said bottom detection circuit with said threshold level.

**36. (currently amended)** The burst signal detection circuit according to claim 28, wherein said amplitude identifying circuit includes:

a peak detection circuit and a bottom detection circuit for detecting the maximum level and the minimum level, respectively, of the output signal from the DC variation removing circuit;

a threshold level control circuit ~~for~~ generating a first threshold level by shifting the output level of said bottom detection circuit by a predetermined value and generating a second threshold level by shifting the output level of said peak detection circuit by a predetermined value; and

a comparator circuit ~~for~~ comparing said first threshold level and said second threshold level with each other.

37. **(currently amended)** The burst signal detection circuit according to claim 28, wherein said threshold level control circuit includes a temperature compensating circuit ~~for~~ changing said threshold level in accordance with the temperature change, said temperature compensating circuit being so configured as to compensate for the variation of the gain due to the temperature change.

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38. **(currently amended)** The burst signal detection circuit according to claim 28, wherein said threshold level control circuit includes a reference voltage circuit ~~for~~ changing said threshold level with the supply voltage change, said reference voltage circuit being so configured as to compensate for the variation of the gain due to the supply voltage change.

39. **(currently amended)** The burst signal detection circuit according to claim 28, further comprising a photodiode ~~photo-diode~~ ~~for~~ receiving an optical signal and a preamplifier ~~for~~ converting the current signal from said photodiode ~~photo-diode~~ into a voltage signal, wherein the arrival of a burst signal is detected from the output signal of



said preamplifier.

**40. (new)** A burst signal detection circuit comprising;

a DC variation removing circuit detecting the peak level of an input signal when an input signal level is rising, and removing the DC level variation of the input signal by differentially amplifying the difference between the input signal level and the detected peak level of the input signal; and

an amplitude identifying circuit detecting the presence or absence of a burst signal in said input signal based on the output signal from the DC variation removing circuit

said amplitude identifying circuit including:

an amplitude detection circuit detecting the maximum amplitude of the output signal of said DC variation removing circuit;

a threshold level control circuit controlling a threshold level; and

a comparator circuit comparing the output level of said amplitude detection circuit with said threshold level and outputting a detection signal indicating the presence or absence of the burst signal.

**41. (new)** The burst signal detection circuit according to claim 40, wherein said DC variation removing circuit includes a peak detection circuit detecting the peak level of the input signal when the input signal level is rising, and a differential amplifier differentially amplifying the difference between the input signal and the output signal from said peak detection circuit.

**42. (new)** The burst signal detection circuit according to claim 40, wherein said DC variation removing circuit includes:

a peak detection circuit detecting the peak level of the input signal when the input signal level is rising;

a level shift circuit shifting the output signal of said peak detection circuit by a predetermined value; and

a differential amplifier amplifying the difference between the output signal of said level shift circuit and the input signal.

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**43. (new)** The burst signal detection circuit according to claim 40, wherein said amplitude identifying circuit includes:

a peak detection circuit or a bottom detection circuit detecting the maximum level or the minimum level, respectively, of the output signal from the DC variation removing circuit;

a threshold level control circuit generating a threshold level; and

a comparator circuit comparing the output level of said peak detection circuit or said bottom detection circuit with said threshold level.

**44. (new)** The burst signal detection circuit according to claim 40, wherein said amplitude identifying circuit includes:

a peak detection circuit or a bottom detection circuit detecting the maximum level or the minimum level, respectively, of the output signal from the DC variation removing

circuit;

a threshold level control circuit generating a threshold level by shifting the output level of said bottom detection circuit or said peak detection circuit by a predetermined value; and

a comparator circuit comparing the output level of said peak detection circuit or said bottom detection circuit with said threshold level.

**45. (new)** The burst signal detection circuit according to claim 40, wherein said amplitude identifying circuit includes:

a peak detection circuit and a bottom detection circuit detecting the maximum level and the minimum level, respectively, of the output signal from the DC variation removing circuit;

a threshold level control circuit generating a first threshold level by shifting the output level of said bottom detection circuit by a predetermined value and generating a second threshold level by shifting the output level of said peak detection circuit by a predetermined value; and

a comparator circuit comparing said first threshold level and said second threshold level with each other.

**46. (new)** The burst signal detection circuit according to claim 40, wherein said threshold level control circuit includes a temperature compensating circuit changing said threshold level in accordance with the temperature change, said temperature compensating circuit being so configured as to compensate for the variation of the gain

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due to the temperature change.

47. (new) The burst signal detection circuit according to claim 40, wherein said threshold level control circuit includes a reference voltage circuit changing said threshold level with the supply voltage change, said reference voltage circuit being so configured as to compensate for the variation of the gain due to the supply voltage change.

48. (new) The burst signal detection circuit according to claim 40, further comprising a photodiode receiving an optical signal and a preamplifier converting the current signal from said photodiode into a voltage signal, wherein the arrival of a burst signal is detected from the output signal of said preamplifier.

49. (new) A burst signal detection circuit comprising:

a DC variation removing circuit detecting the peak level of an input signal when the input signal level is rising and removing the DC level variation of the input signal by differentially amplifying the difference between the input level and the detected peak level of the input signal;

a signal amplifier amplifying the output signal of said DC variation removing circuit; and

an amplitude identifying circuit detecting the presence or absence of a burst signal in said input signal based on the output signal from said signal amplifier;

said amplitude identifying circuit including:

an amplitude detection circuit detecting the maximum amplitude of the output

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signal of said signal amplifier;

a threshold level control circuit controlling the threshold level; and

a comparator circuit comparing the output level of said amplitude detection circuit with said threshold level and outputting a detection signal indicating the presence or absence of the burst signal.

**50. (new)** The burst signal detection circuit according to claim 49, wherein said DC variation removing circuit includes:

a peak detection circuit detecting the peak level of the input signal when the input signal level is rising; and

a differential amplifier for differentially amplifying the difference between the input signal and the output signal from said peak detection circuit.

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**51. (new)** The burst signal detection circuit according to claim 49, wherein said DC variation removing circuit includes:

a peak detection circuit detecting the peak level of the input signal when the input signal level is rising;

a level shift circuit shifting the output signal of said peak detection circuit by a predetermined value; and

a differential amplifier amplifying the difference between the output signal of said level shift circuit and the input signal.

**52. (new)** The burst signal detection circuit according to claim 49, wherein said

amplitude identifying circuit includes:

a peak detection circuit or a bottom detection circuit detecting the maximum level or the minimum level, respectively, of the output signal from the DC variation removing circuit;

a threshold level control circuit generating a threshold level; and

a comparator circuit comparing the output level of said peak detection circuit or said bottom detection circuit with said threshold level.

**53. (new)** The burst signal detection circuit according to claim 49, wherein said amplitude identifying circuit includes:

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a peak detection circuit or a bottom detection circuit detecting the maximum level or the minimum level, respectively, of the output signal from the DC variation removing circuit;

a threshold level control circuit generating a threshold level by shifting the output level of said bottom detection circuit or said peak detection circuit by a predetermined value; and

a comparator circuit comparing the output level of said peak detection circuit or said bottom detection circuit with said threshold level.

**54. (new)** The burst signal detection circuit according to claim 49, wherein said amplitude identifying circuit includes:

a peak detection circuit and a bottom detection circuit detecting the maximum level and the minimum level, respectively, of the output signal from the DC variation

removing circuit;

a threshold level control circuit generating a first threshold level by shifting the output level of said bottom detection circuit by a predetermined value and generating a second threshold level by shifting the output level of said peak detection circuit by a predetermined value; and

a comparator circuit comparing said first threshold level and said second threshold level with each other.

55. (new) The burst signal detection circuit according to claim 49, wherein said threshold level control circuit includes a temperature compensating circuit changing said threshold level in accordance with the temperature change, said temperature compensating circuit being so configured as to compensate for the variation of the gain due to the temperature change.

56. (new) The burst signal detection circuit according to claim 49, wherein said threshold level control circuit includes a reference voltage circuit changing said threshold level with the supply voltage change, said reference voltage circuit being so configured as to compensate for the variation of the gain due to the supply voltage change.

57. (new) The burst signal detection circuit according to claim 49, further comprising a photodiode receiving an optical signal and a preamplifier converting the current signal from said photodiode into a voltage signal, wherein the arrival of a burst signal is detected from the output signal of said preamplifier.

**58. (new)** A burst signal detection circuit comprising:

an amplitude detection circuit detecting the peak level of an input signal when an input signal level is rising, removing the DC level variation of the input signal based on said peak level and detecting the maximum amplitude of said input signal;

a threshold level control circuit controlling a threshold level; and

a comparator circuit comparing the output level of said amplitude detection circuit with said threshold level and outputting a detection signal indicating the presence or absence of the burst signal.

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**59. (new)** The burst signal detection circuit according to claim 58, wherein said amplitude detection circuit comprises a master-slave type amplitude detection circuit including a master peak detection circuit detecting, when the input signal level is rising, the absolute maximum level of said input signal, and a slave bottom detection circuit detecting the relative minimum level of said input signal from the output level of said master peak detection circuit.

**60. (new)** The burst signal detection circuit according to claim 59, wherein a level hold capacitor in said slave bottom detection circuit of said master-slave type amplitude detection circuit is connected to the output of said master peak detection circuit.

**61. (new)** The burst signal detection circuit according to claim 58, wherein said amplitude identifying circuit includes:



a peak detection circuit or a bottom detection circuit detecting the maximum level or the minimum level, respectively, of the output signal from the DC variation removing circuit;

a threshold level control circuit generating a threshold level; and

a comparator circuit for comparing the output level of said peak detection circuit or said bottom detection circuit with said threshold level.

**62. (new)** The burst signal detection circuit according to claim 58, wherein said amplitude identifying circuit includes:

a peak detection circuit or a bottom detection circuit detecting the maximum level or the minimum level, respectively, of the output signal from the DC variation removing circuit;

a threshold level control circuit generating a threshold level by shifting the output level of said bottom detection circuit or said peak detection circuit by a predetermined value; and

a comparator circuit for comparing the output level of said peak detection circuit or said bottom detection circuit with said threshold level.

**63. (new)** The burst signal detection circuit according to claim 58, wherein said amplitude identifying circuit includes:

a peak detection circuit and a bottom detection circuit detecting the maximum level and the minimum level, respectively, of the output signal from the DC variation removing circuit;

a threshold level control circuit generating a first threshold level by shifting the output level of said bottom detection circuit by a predetermined value and generating a second threshold level by shifting the output level of said peak detection circuit by a predetermined value; and

a comparator circuit comparing said first threshold level and said second threshold level with each other.

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**64. (new)** The burst signal detection circuit according to claim 58, wherein said threshold level control circuit includes a temperature compensating circuit changing said threshold level in accordance with the temperature change, said temperature compensating circuit being so configured as to compensate for the variation of the gain due to the temperature change.

**65. (new)** The burst signal detection circuit according to claim 58, wherein said threshold level control circuit includes a reference voltage circuit changing said threshold level with the supply voltage changer said reference voltage circuit being so configured as to compensate for the variation of the gain due to the supply voltage change.

**66. (new)** The burst signal detection circuit according to claim 58, further comprising a photodiode receiving an optical signal and a preamplifier converting the current signal from said photodiode into a voltage signal, wherein the arrival of a burst signal is detected from the output signal of said preamplifier.

**67. (new)** A burst signal detection circuit comprising:

a DC variation removing signal amplifier detecting the peak level of an input signal when the input signal level is rising, removing the DC level variation of the input signal based on the detected peak, and amplifying said input signal; and

an amplitude identifying circuit detecting the presence or absence of a burst signal in said input signal based on the output signal from the DC variation removing signal amplifier;

said amplitude identifying circuit including:

an amplitude detection circuit detecting the maximum amplitude of the output signal of said DC variation removing amplifier;

a threshold level control circuit controlling the threshold level; and

a comparator circuit comparing the output level of said amplitude detection circuit with said threshold level and outputting a detection signal indicating the presence or absence of the burst signal.

**68. (new)** The burst signal detection circuit according to claim 67, wherein said DC variation removing signal amplifier includes:

a bottom detection circuit detecting the DC level variation of said input signal when the input signal level is falling;

a peak detection circuit detecting the DC level variation of said input signal when the input signal level is rising; and

an amplifier supplied with said input signal and the output signal of said bottom

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detection circuit or the output signal of said peak detection circuit;

the negative phase output of said amplifier being fed back to the positive phase input side of said amplifier through a feedback resistor; and

the positive phase output of said amplifier being fed back to the negative phase input side of said amplifier through said peak detection circuit and a feedback resistor.

**69. (new)** The burst signal detection circuit according to claim 67, wherein said DC variation removing signal amplifier includes a master-slave type automatic threshold control circuit having:

a master peak detection circuit detecting the absolute maximum level of said input signal when the input signal level is rising;

a slave bottom detection circuit detecting the relative minimum level of said input signal from the output signal of said master peak detection circuit; and

a voltage dividing circuit generating a threshold level by dividing the output signal of said master peak detection circuit and the output signal of said slave bottom detection circuit.

**70. (new)** The burst signal detection circuit according to claim 67, wherein said DC variation removing signal amplifier includes a master-slave type automatic threshold control circuit having:

a master peak detection circuit detecting the absolute maximum level of said input signal when the input signal level is rising;

a voltage dividing circuit generating a voltage divided signal by dividing the

output signal of said master peak detecting signal and said input signal; and

a slave bottom detection circuit generating a threshold level by detecting the relative minimum level of said voltage divided signal from the output signal of said master peak detection circuit.

**71. (new)** The burst signal detection circuit according to claim 69, wherein a level hold capacitor of said slave peak detection circuit of said master-slave type automatic threshold control circuit is connected to the output of said master bottom detection circuit.

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**72. (new)** The burst signal detection circuit according to claim 70, wherein a level hold capacitor of said slave bottom detection circuit of said master-slave type automatic threshold control circuit is connected to the output of said master peak detection circuit.

**73. (new)** The burst signal detection circuit according to claim 67, wherein said amplitude identifying circuit includes:

a peak detection circuit or a bottom detection circuit for detecting the maximum level or the minimum level, respectively, of the output signal from the DC variation removing circuit;

a threshold level control circuit generating a threshold level; and

a comparator circuit comparing the output level of said peak detection circuit or said bottom detection circuit with said threshold level.

74. (new) The burst signal detection circuit according to claim 67, wherein said amplitude identifying circuit includes:

a peak detection circuit or a bottom detection circuit for detecting the maximum level or the minimum level, respectively, of the output signal from the DC variation removing circuit;

a threshold level control circuit generating a threshold level by shifting the output level of said bottom detection circuit or said peak detection circuit by a predetermined value; and

a comparator circuit comparing the output level of said peak detection circuit or said bottom detection circuit with said threshold level.

75. (new) The burst signal detection circuit according to claim 67, wherein said amplitude identifying circuit includes:

a peak detection circuit and a bottom detection circuit for detecting the maximum level and the minimum level, respectively, of the output signal from the DC variation removing circuit;

a threshold level control circuit generating a first threshold level by shifting the output level of said bottom detection circuit by a predetermined value and generating a second threshold level by shifting the output level of said peak detection circuit by a predetermined value; and

a comparator circuit comparing said first threshold level and said second threshold level with each other.

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76. (new) The burst signal detection circuit according to claim 67, wherein said threshold level control circuit includes a temperature compensating circuit changing said threshold level in accordance with the temperature change, said temperature compensating circuit being so configured as to compensate for the variation of the gain due to the temperature change.

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77. (new) The burst signal detection circuit according to claim 67, wherein said threshold level control circuit includes a reference voltage circuit changing said threshold level with the supply voltage change, said reference voltage circuit being so configured as to compensate for the variation of the gain due to the supply voltage change.

78. (new) The burst signal detection circuit according to claim 67, further comprising a photodiode receiving an optical signal and a preamplifier converting the current signal from said photodiode into a voltage signal, wherein the arrival of a burst signal is detected from the output signal of said preamplifier.

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